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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/297,256	04/28/1999	GORAN SUNDHOLM	U012229-2	9504

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EXAMINER

KIM, CHRISTOPHER S

ART UNIT	PAPER NUMBER
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3752

DATE MAILED: 02/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/297,256

Applicant(s)

Sundholm

Examiner
Christopher S. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 Feb 2002
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirements.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other: _____

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DETAILED ACTION

Response to Amendment

1. The finality of the rejection of the last Office action is withdrawn based on the mail detail resulting from the September 11, 2001 incident. Amendment filed February 13, 2002 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 1, 13 and 14 recite "the long tube together with the at least one drive gas source constitutes a hydraulic accumulator." The specification, on page 5, lines 16-20, discloses the upstream end of tube 2 connected to a water main 16, at a pressure higher than 3 bar, and a valve 19 at the downstream end of tube 1. The valve 19 is opened at the start of filling of tube 2 and is closed after the tube is filled. If the nitrogen bottles 9-12, at a pressure of 250 bar, and the tube 2 form a hydraulic accumulator, what prevents the nitrogen gas from escaping from the nitrogen bottle and the tube during filling when valve 19 is open?

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4. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

While applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947). The term "accumulator" in claims 1, 13 and 14 is used by the claims to mean "a fix volume of liquid (in tube 2) having a gas pressure source (nitrogen bottles 9-12) to discharge the liquid," while the accepted meaning is "on that accumulates."

Claim Rejections - 35 USC § 102

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Naumann (3,613,794).

Naumann discloses a fire fighting apparatus comprising: a plurality of spray heads 25; a tube system 13; at least one drive gas source 15, 17; and release means 27.

Claim Rejections - 35 USC § 103

6. Claims 1-6, and 11-14 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Sundholm (5,713,417).

With respect to claims 1-6, 11 and 12, Sundholm discloses, in figure 1, a fire fighting apparatus comprising: a plurality of spray heads 1, 1a; a tube system 3, 4; at least one drive gas source 2; a release means (inherent in the device); and a stop/opening valve (no reference number

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but shown downstream of each gas source). The apparatus is divided into main sections, each containing a gas source 2. Figure 1 shows one spray head 1 per zone while figure 2 shows multiple spray heads 13 per zone. The drive gas is nitrogen (column 1, line 40) having a pressure of 30 to 400 bar (column 2, line 65 discloses 100 to 200 bar). The spray heads generate fog-like spray of water (column 1, line 41 and line 51). Sundholm differs from what is being claimed in the extinguishing medium source consisting essentially of a long tube. Sundholm discloses, in figure 2, accumulators 10 connected in parallel to a tube 11 actuated by valve 12. Charging the device(s) of Sundholm so that water is filled to the inlet of the accumulator(s) 2, 10 or into the accumulator(s) 2, 10 is a matter of obviousness dependent on operational conditions. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have charged the device of Sundholm so that water is filled to the inlet of the accumulators to minimize water use.

With respect to claims 13 and 14, Sundholm discloses, in figure 1, a fire fighting apparatus comprising: a plurality of spray heads 1, 1a; a tube system 3, 4; at least one drive gas source 2; a release means (inherent in the device); a long tube 3; and a stop/opening valve (no reference number but shown downstream of each gas source). The apparatus is divided into main sections, each containing a gas source 2. Figure 1 shows one spray head 1 per zone while figure 2 shows multiple spray heads 13 per zone. The drive gas is nitrogen (column 1, line 40) having a pressure of 30 to 400 bar (column 2, line 65 discloses 100 to 200 bar). The spray heads generate fog-like spray of water (column 1, line 41 and line 51). Sundholm differs from what is being claimed in

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the extinguishing medium source consisting essentially of a long tube. Sundholm discloses, in figure 2, accumulators 10 connected in parallel to a tube 11 actuated by valve 12. Charging the device(s) of Sundholm so that water is filled to the inlet of the accumulator(s) 2, 10 or into the accumulator(s) 2, 10 is a matter of obviousness dependent on operational conditions. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have charged the device of Sundholm so that water is filled to the inlet of the accumulators to minimize water use. Additionally, Sundholm does not disclose the tube having a length of at least about 1 km or hundreds of meters. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have made the long tube of Sundholm at least 1 km for large ships.

7. Claims 7 and 8 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Sundholm as applied to claim 6 above, and further in view of Willms.

Willms discloses, in figure 1, a fire fighting apparatus with zone 1 and zone 2 each zone having a release means 20, 20A arranged along tube 12 for releasing a group of spray heads 15, 15A. Each group of spray heads contains a solenoid valve 17, 17A. It would have been obvious to a person having ordinary skill in the art at the time of the invention to use the zone release means and solenoid valve of Willms in the fire fighting apparatus of Sundholm to conserve the extinguishing medium.

8. Claims 9 and 10 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Sundholm as applied to claim 1 above, and further in view of Jamison.

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With respect to claim 9, Jamison discloses, in column 5, lines 6-11, a text by Donald W. Mitchell titled Mines Fires where fog-like spray water is critical in fighting mine fires. It would have been obvious to a person having ordinary skill in the art at the time of the invention to use the fire fighting apparatus of Sundholm in a mine tunnel as disclosed by Jamison. The device of Sundholm placed in a tunnel would inherently follow the longitudinal direction of the tunnel.

With respect to claim 10, Sundholm discloses, in column 3, lines 23-25, spray heads 22, 23 arranged in opposite direction. Sundholm does not disclose different heights at which the spray heads are placed. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have positioned the spray heads at different heights in the device of Sundholm in view of Jamison for greater coverage of spray area.

Response to Arguments

9. Applicant's arguments filed February 13, 2002 have been fully considered but they are not persuasive.

In response to applicant's request for an affidavit, the rejection under 35 U.S.C. 112, first paragraph is on the basis that the specification does not enable the claimed invention. Applicant is requested to identify, within the MPEP, the requirement for an affidavit for such a rejection. Additionally, rejection poses a question to the applicant for clarification. Again, the applicant is required to provide an explanation of how the nitrogen bottles and the tube constitute an accumulator. How is the nitrogen prevented from escaping? It appears that the nitrogen is a

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drive gas but does not accommodate changes in the volume of water within the tube. Therefore, how do the nitrogen bottles and the tube function as an accumulator? The definition of an accumulator, provided by the applicant, in the Standard Handbook for Mechanical Engineers, states, "Pressurized hydraulic fluid acting against an actuator or motor converts fluid pressure energy into mechanical energy." Applicant's pressurized hydraulic fluid, the water within the tube, does not act against an actuator or motor, the nitrogen gas. Applicant's pressurized hydraulic fluid, the water within the tube, acts against the valve of the nitrogen bottle. When the valve of the nitrogen bottle is opened, the nitrogen gas pressure energy is converted into mechanical energy and is not dependent on the water pressure in the tube, i.e., the nitrogen gas drives the water even when the water pressure in the tube is zero. Therefore, according to the applicant's disclosure, the tube and the drive gas do not appear to comply with the Standard Handbook for Mechanical Engineers' definition of an accumulator.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period


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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (703) 308-8336. The examiner can normally be reached on Monday-Thursday from 6:30 a.m. to 5:00 p.m.

The fax phone number for this Group is (703) 308-7766.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.


WILLIAM DOERRLER
PATENT EXAMINER
GROUP 3400

CK

February 25, 2002